

Metastability on random graphs

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This talk provides a brief overview of what is known about metastable behaviour of Glauber spin-flip dynamics on dense random graphs. Given the graph, assign an Ising spin to each vertex. Each spin interacts with a magnetic field, while each pair of spins connected by an edge interact with each other according to a random ferromagnetic pair potential. Spins flip according to a Metropolis dynamics at a given inverse temperature. We show that, in the limit as the graph gets large, the average crossover time from a metastable state to a stable state is close to that of the mean-field dynamics where the pair potential is replaced by its average. We describe a few examples of random graphs and random potentials for which the average crossover time can be computed asymptotically.

This is joint work with A. Bovier, S. Marello, E. Pulvirenti and M. Slowik.